



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Bethany A. Card
Secretary

Martin Suuberg
Commissioner

Suzanne Howard
Wellesley College
300 Central Street
Wellesley, MA 02481

June 08, 2022
RE: Water Management Act
Permit No. 9P4-3-20-317.01
DRAFT BRP WM 02 Permit Amendment & WMA
5-Year Permit Review

Dear Ms. Howard:

The Massachusetts Department of Environmental Protection (MassDEP) received a BRP WM 02 permit amendment application on February 15, 2022 from Wellesley College to add Botany Well No.3 for irrigation use. MassDEP was also in the process of conducting a 5-year review of Wellesley College's Water Management Act (WMA) Permit #9P4-3-20-317.01. This amended permit reflects the updated permit requirements. Please find the following attached documents:

- Findings of Fact in Support of the **DRAFT** Permit Decision.
- **DRAFT** Water Management Act Permit for withdrawals by Wellesley College in the Charles River Basin.

Consistent with the revised Water Management Act Regulations promulgated on November 7, 2014, MassDEP will now publish notice in the Environmental Monitor that a **DRAFT** Permit is available for review and comment for 30 days from the June 08, 2022 publication in the Environmental Monitor. Notice of the comment period will also be sent to all registrants, permittees and those having non-consumptive use statements within the Charles River Basin. MassDEP expects to issue the final permit within 30 days of the close of the comment period.

If you have any questions regarding the draft permit, please contact Shi Chen at shi.chen@mass.gov or me at 617-292-5706 or duane.levangie@mass.gov.

Sincerely,

Duane LeVangie
Water Management Program Chief
Bureau of Water Resources

DRAFT WMA Permit 9P4-3-20-317.01
Wellesley College
Cover Letter

cc: Julie Wood and Heather Miller Charles River Watershed Association
Julia Blatt and Sarah Bower, Mass Rivers Alliance
Justine M. Carroll, Tata & Howard, Inc

mass.gov.sharepoint.com/W:\DWP Archive\NERO\Wellesley-9P432031701-DRAFT-WMA-2022-06-08
mass.gov.sharepoint.com/W:\DWPWMA\Permit Compliance Review\Wellesley-9P432031701-DRAFT-
WMA-2022-06-08

Contact Glynis L. Bugg, Acting Diversity Director/Civil Rights: 857 262-0606 TTY# MassRelay
Service1-800-439-2370 <http://www.mass.gov/eea/agencies/massdep/service/justice/>
(Version revised 4.4.2022)



Massachusetts Department of Environmental Protection
One Winter Street, Boston MA 02108 • Phone: 857 262-0606
Communication for Non-English-Speaking Parties - 310 CMR
1.03(5)(a)



1 English:

This document is important and should be translated immediately. If you need this document translated, please contact MassDEP's Diversity Director at the telephone numbers listed below.



2 Español (Spanish):

Este documento es importante y debe ser traducido inmediatamente. Si necesita este documento traducido, comuníquese con el Director de Diversidad de MassDEP a los números de teléfono que aparecen más abajo.



3 Português (Portuguese):

Este documento é importante e deve ser traduzido imediatamente. Se você precisa deste documento traduzido, entre em contato com Diretor de Diversidade da MassDEP para os números de telefone listados abaixo.



4(a) 中國（傳統）(Chinese (Traditional)):

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與MassDEP的多元化總監聯繫。



4(b) 中国（简体中文）(Chinese (Simplified)):

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與MassDEP的多元化總監聯繫。



5 Ayisyen (franse kreyòl) (Haitian) (French Creole):

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradui imedyatman. Si ou bezwen dokiman sa a tradui, tanpri kontakte Divèsite Direktè MassDEP a nan nimewo telefòn ki nan lis pi ba a.



6 Việt (Vietnamese):

Tài liệu này rất quan trọng và cần được dịch ngay lập tức. Nếu bạn cần dịch tài liệu này, xin vui lòng liên hệ với Giám đốc Đa dạng của MassDEP theo các số điện thoại được liệt kê dưới đây.



7 ប្រទេសកម្ពុជា (Kmer (Cambodian)):

ឯកសារនេះគឺមានសារៈសំខាន់និងគួរត្រូវបានបកប្រែភ្លាមៗ ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនងឆ្នោតជានាយក MassDEP នៅលេខទូរស័ព្ទដែលបានរាយខាងក្រោម។



8 Kriolu Kabuverdianu (Cape Verdean):

Es documento é importante e deve ser traduzido imidiatamente. Se bo precisa des documento traduzido, por favor contacta Director de Diversidade na MassDEP's pa es numero indicode li d'boche.



9 Русский язык (Russian):

Это важный документ и он должен быть безотлагательно переведен. Если вам нужен перевод данного документа, пожалуйста, свяжитесь с директором по разнообразию компании MassDEP по телефону указанному ниже



10 العربية (Arabic):

هذه الوثيقة مهمة ويجب ترجمتها على الفور. اذا كنت بحاجة الى هذه الوثيقة المترجمة، يرجى الاتصال بمدير التنوع في PMassDE على أرقام الهواتف المدرجة أدناه.



11 한국어 (Korean):

이 문서는 중요하고 즉시 번역해야 합니다. 이 문서의 번역이 필요하시다면, 아래의 전화 번호로 MassDEP의 다양성 감독에 문의하시기 바랍니다.



12 հայերեն (Armenian):

Այս փաստաթուղթը շատ կարևոր է եւ պետք է թարգմանել անմիջապես. Եթե Ձեզ անհրաժեշտ է այս փաստաթուղթը թարգմանվել դիմել MassDEP բազմազանությունը տնօրեն է հեռախոսահամարների թվարկված են ստորև.



13 فارسی (Farsi [Persian]):

این سند مهم است و باید فوراً ترجمه شده است. اگر شما نیاز به این سند ترجمه شده، لطفاً با ما تماس تنوع مدیر PMassDE در شماره تلفن های ذکر شده در زیر.



14 Français (French):

Ce document est important et devrait être traduit immédiatement. Si vous avez besoin de ce document traduit, s'il vous plaît communiquer avec le directeur de la diversité MassDEP aux numéros de téléphone indiqués ci-dessous.



15 Deutsch (German):

Dieses Dokument ist wichtig und sollte sofort übersetzt werden. Sofern Sie die Übersetzung von diesem Dokument benötigen, wenden Sie sich bitte

an den Diversity Director MassDEP unter der unten aufgeführten Telefonnummer.



16 Ελληνική (Greek):

Το παρόν έγγραφο είναι σημαντικό και θα πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του παρόντος εγγράφου, παρακαλούμε επικοινωνήστε με τον Διευθυντή Διαφορετικότητας του MassDEP στους αριθμούς τηλεφώνου που αναγράφονται παρακάτω.



17 Italiano (Italian):

Questo documento è importante e dovrebbe essere tradotto immediatamente. Se avete bisogno di questo documento tradotto, si prega di contattare il Direttore di Diversità di MassDEP ai numeri di telefono elencati di seguito.



18 Język Polski (Polish):

Dokument ten jest ważny i powinien zostać natychmiast przetłumaczony. Jeśli potrzebujesz przetłumaczonej wersji dokumentu, prosimy o kontakt z dyrektorem ds. różnorodności MassDEP pod jednym z numerów telefonu wymienionych poniżej.



19 हिन्दी (Hindi):

यह दस्तावेज़ महत्वपूर्ण है और तुरंत अनुवाद किया जाना चाहिए. यदि आपको इस दस्तावेज़ का अनुवाद करने की आवश्यकता है, तो कृपया नीचे सूचीबद्ध टेलीफोन नंबरों पर मासडेप्स डाइवर्सिटी के निदेशक से संपर्क करें।.



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Findings of Fact in Support of **Draft** Permit Decision Water Management Act Permit #9P4-3-20-317.01 Wellesley College

The Massachusetts Department of Environmental Protection (the Department) makes the following *Findings of Fact* in support of the attached **Draft** Water Management Act (WMA) Permit #9P4-3-20-317.01 and includes herewith its reasons for issuing the **Draft** permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11.

The issuance of this permit is in response to a water withdrawal permit amendment application submitted by Wellesley College (the “applicant”) for the purpose of adding an additional withdrawal source, the Botany Well No. 3 for irrigation use.

The Department adopted revised Water Management Regulations at 310 CMR 36.00 on November 7, 2014, (described in greater detail below). Since that time, the Department has been working closely with each Water Management Act permittee to fully consider all aspects of their individual situations and ensure thoughtful and implementable permits.

Wellesley College Withdrawal History

Under the Act and Regulations MassDEP issued a permit to Wellesley College on May 5, 2000 allowing Wellesley College to withdraw volumes previously allocated through registration #32031702 which was not renewed and expired on January 1, 1998. In November 2008, Wellesley College filed to renew its permit which was set to expire on February 28, 2009, to continue authorized permitted withdrawals for another 20 year period in the Charles River Basin. On May 13, 2009, MassDEP sent Wellesley College a Permit Renewal Order to Complete that outlined additional information necessary for the college to complete the permit renewal process. Wellesley College responded to the Order to Complete on September 8, 2009, to which MassDEP responded with a DRAFT permit on January 28, 2010.

In the May 5, 2000 permit cover letter, MassDEP issued a Determination of Non-Consumptive Use for the 720,000 gallons per day (gpd) withdrawn from June through September from Lake Waban for non-contact cooling water. As such, Lake Waban was not included as a source in the permit issued in 2000. In 2008 the college discontinued use of Lake Waban water for non-contact cooling water and has no plans to reactivate the system. Should the college reactivate the system they will need to request a new Determination of Nonconsumptive Use.

In November 2008 the college applied for a permit amendment to add Lake Waban as a permitted source for irrigation purposes. MassDEP approved Lake Waban as a permitted source for irrigation use

only in the renewed permit issued on February 26, 2010. Withdrawals from Lake Waban must be metered and reported annually on a separate reporting form for non-potable sources provided by MassDEP.

The Permit Extensions

The renewed permit issued on February 26, 2010, had an expiration date of February 28, 2029. In 2010, the permit was extended for two years by Section 173 of Chapter 240 of the Acts of 2010, the Permit Extension Act. In 2012, the Permit Extension Act was amended by chapter 238 of the Acts of 2012, and the permit was again extended an additional two years to February 28, 2033. That date was further extended by 462 days due to COVID-19 Order No. 42, "Order Resuming State Permitting Deadlines and Continuing to Extend the Validity of Certain State Permits," issued on July 2, 2020. The expiration date for all permits going forward in the Charles River Basin will be June 5, 2034.

The Water Management Act (M.G.L.c. 21G)

The Water Management Act (Act) requires that MassDEP issue permits that balance a variety of factors including without limitation:

- Impact of the withdrawal on other sources of water;
- Time of year when the withdrawal will be made;
- Water available within the safe yield of the source;
- Reasonable protection of existing water uses, land values, investments and enterprises;
- Proposed use of the water and other existing or projected uses of water from the water source;
- Municipal and Massachusetts Water Resources Commission (WRC) water resource management plans;
- Reasonable conservation consistent with efficient water use;
- Reasonable protection of public drinking water supplies, water quality, wastewater treatment capacity, waste assimilation capacity, groundwater recharge areas, navigation, hydropower resources, water-based recreation, wetland habitat, fish and wildlife, agriculture, floodplains; and
- Reasonable economic development and job creation.

Water Management Regulation Revisions

In 2010 the Executive Office of Energy and Environmental Affairs (EEA) convened the Sustainable Water Management Initiative (SWMI) for the purpose of incorporating the best available science into the management of the Commonwealth's water resources. SWMI was a multi-year process that included a wide range of stakeholders and support from the Departments of Environmental Protection, Fish and Game, and Conservation and Recreation. In November 2012 the *Massachusetts Sustainable Water Management Initiative Framework Summary*

(<https://www.mass.gov/files/documents/2016/08/wf/swmi-framework-nov-2012.pdf>) was released.

On November 7, 2014, the Department adopted revised Water Management Regulations at 310 CMR 36.00 that incorporate elements of the SWMI framework and the Water Conservation Standards adopted by the Massachusetts WRC. The regulations reflect a carefully developed balance to protect the health of Massachusetts' water bodies while meeting the needs of businesses and communities for water.

Without limitation, the Department has incorporated the following into Water Management permitting:

- Safe yield determinations for the major river basins based on a new methodology developed through SWMI (see the Safe Yield in the Charles River Basin section of this document);
- Water conservation and performance standards reviewed and approved by the WRC in July 2018 (<https://www.mass.gov/files/documents/2018/09/11/ma-water-conservation-standards-2018.pdf>), including without limitation;
- Environmental protections developed through SWMI, including without limitation;
 - protection for coldwater fish resources;
 - minimization of withdrawal impacts in areas stressed by groundwater use;
 - mitigation of the impacts of increasing withdrawals.

Safe Yield in the Charles River Basin

This permit is being issued under the Safe Yield methodology adopted by MassDEP on November 7, 2014, and described in the Regulations at 310 CMR 36.13. As of the date of issuance of this permit, the safe yield for the Charles River Basin water source is 65.2 million gallons per day (MGD), and total allocated withdrawals are 44.12 MGD. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Charles River Basin, will be within the remaining safe yield and may be further conditioned as outlined in the regulations.

Findings of Fact for Permit Conditions in Wellesley College's Water Management Act Permit

The Findings of Fact for the special conditions included in the permit generally describe the rationale and background for each special condition in the DRAFT permit. This summary of permit special conditions is not intended to, and should not be construed as, modifying any of the permit special conditions. In the event of any ambiguity between this summary and the actual permit conditions, the permit language shall control.

Special Condition 1, Maximum Authorized Annual Average Withdrawal Volume, specifies the authorized annual average withdrawal volume for each period during the life of this permit. The existing withdrawal volume for Wellesley College is 0.35 million gallons per day (MGD) or 127.75 million gallons per year (MGY) over 365 days from its public water supply wells and over 210 days from its irrigation sources. This permit will at the request of Wellesley College to extend the irrigation period to 240 days (April to November) without increasing the authorized withdrawal volume in order to meet the pedagogical needs of students.

Special Condition 2, Maximum Authorized Daily Withdrawal Volume, reflects the maximum daily withdrawal rates by source. Withdrawals in excess of the maximum daily rate require the prior approval of the Department.

Special Condition 3, Zone II Delineations, Wellesley College's permitted public water supply sources have an approved Zone II delineated. No further Zone II work is required as a condition of this permit.

Special Condition 4, Water Supply Source Protection, requires Wellesley College to repeat the Best Effort Requirements per 310 CMR 22.21 (1) within one year of the issuance of the final permit.

Special Condition 5, Seasonal Limits on Nonessential Outdoor Water Use Wellesley College has requirements for limiting nonessential outdoor water use between May 1st – September 30th. There are two outdoor water use restriction options for Wellesley College to choose from 1) calendar triggered restrictions; or 2) streamflow triggered restrictions.

1. Calendar triggered restrictions: Restrictions shall be implemented from May 1st through September 30th. Many public water suppliers will find this option easier to implement than the streamflow triggered approach.

2. Streamflow triggered restrictions: Restrictions shall be implemented at those times when streamflow falls below designated flow triggers measured at an assigned, web-based, real-time U.S. Geologic Survey (USGS) stream gage from May 1st through September 30th. At a minimum, restrictions shall commence when streamflow falls below the trigger for three consecutive days. Once implemented, the restrictions shall remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for seven consecutive days.

The basis for streamflow triggers is derived from Aquatic Base Flow (ABF) values calculated by the Sustainable Yield Estimator (SYE)¹ for simulated natural flow applied to the assigned local USGS stream gage. The two-tiered trigger values are based on flow levels that are protective of aquatic habitat for fish spawning during the spring bioperiod, designated with the June ABF; and protective flows for fish rearing and growth during the summer bioperiod, designated with the August ABF trigger. Protective flow levels are derived from index gage flow data which represent the least altered stream flows in Massachusetts, and are further described in the Department of Conservation and Recreation (DCR)² and USGS Index Reports³.

If Wellesley College selects the streamflow approach, it has been assigned the USGS local stream gage of #01103500 – Charles River at Dover, MA. The June ABF estimated using SYE is 0.93 cfs and the August ABF value is 0.34 cfs. These cfs units translate to your local gage streamflow triggers as 170 cubic feet per second (cfs) for May and June, and 62 cfs for July, August and September.

Should the reliability of flow measurement at the Charles River at Dover gage be so impaired as to question its accuracy, Wellesley College may request MassDEP's review and approval to transfer to another gage to trigger restrictions. MassDEP reserves the right to require use of a different gage.

Drought triggered restrictions are incorporated into the seasonal limits on outdoor water use as outlined in Special Condition 5. Times of low streamflow and drought do not always coincide, but both low streamflow and drought conditions can have adverse effects on water supplies, natural resources and aquatic life. **Please note that many suppliers impose drought-based outdoor water use restrictions before the Massachusetts Drought Management Task Force declares a Level 1-Mild**

¹ Archfield, S.A., Vogel, R.M., Steeves, P.A., Brandt, S.L., Weiskel, P.K., and Garabedian, S.P., 2010, The Massachusetts Sustainable-Yield Estimator: A decision-support tool to assess water availability at ungaged stream locations in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2009-5227, 41 p. plus CD-ROM. See <http://pubs.usgs.gov/sir/2009/5227/>

² Massachusetts Department of Conservation and Recreation (DCR), 2008 Index Streamflows for Massachusetts, May 2008, Prepared by Office of Water Resources for the Massachusetts Water Resources Commission, 45 p., plus CD-ROM.

³ Armstrong, D.S., Parker, G.W., and Richards, T.A., 2008, Characteristics and classification of least altered streamflows in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2007-5291, 113 p., plus CD-ROM.

Drought (formerly Advisory) because drought conditions can begin to impact local water supplies before a regional advisory is declared.

Wellesley College stated that the technology of the sprinkler system on campus can be utilized to provide the appropriate amount of water needed at a particular location to address hot spots. Therefore, hot spots on campus may be addressed either by the irrigation system or by hand-watering.

Nothing in this permit is intended to prevent suppliers from implementing water use restrictions that are more restrictive than those set forth in this permit.

Special Condition 6, Requirement to Report Raw and Finished Water Volumes, ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

Special Condition 7, Water Conservation Requirements, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the Water Resources Commission in July 2018 (<https://www.mass.gov/doc/massachusetts-water-conservation-standards-2/>).

Special Condition 8, Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins, requires permittees with permitted groundwater sources in subbasins with a net groundwater depletion of 25% or more during August to minimize their withdrawal impacts on those subbasins to the greatest extent feasible, through optimization of groundwater source use, surface water releases to improve streamflows, outdoor water use restrictions and water conservation programs that go beyond the standard Water Management Act permit requirements. Wellesley College's permitted groundwater sources are located in subbasin 21103 which has an August NGD of 119.7%. Therefore, Wellesley College must prepare a minimization plan.

Based on Department records and information submitted by Wellesley College, the Department finds that minimization requirements will be met through the continued implementation of conservation measures that go beyond standard Water Management permit requirements. Those conservation measures are outlined in Table 5.

Special Condition 9, Mitigation of Impacts for Withdrawals that Exceed Baseline, requires mitigation, where feasible, for withdrawals over a baseline volume. Baseline withdrawal means the volume of water withdrawn during calendar year 2005 plus 5%, or the average annual volume withdrawn from 2003 through 2005 plus 5%, whichever is greater provided that:

- (a) baseline cannot be less than a permittee's registered volume;
- (b) baseline cannot be greater than the permittee's authorized volume for 2005; and
- (c) if, during the period from 2003 to 2005, the permittee's withdrawals from the water source were interrupted due to contamination of the source or construction of a treatment plant, the Department will use best available data to establish a baseline volume from the water source.

The calculated baseline withdrawal volume for Wellesley College based on the withdrawal records submitted by the college is 0.32 MGD, the average annual volume withdrawn from 2003 through 2005 plus 5%. Currently no part of Wellesley College's wastewater is being returned to groundwater. Therefore, Wellesley College is required to prepare a mitigation plan to mitigate 0.03 MGD and to implement that plan before it withdraws more than its baseline volume.

Wellesley College submitted a mitigation plan. After review, the activities that potentially may qualify for mitigation credits include a stormwater recharge project, land protection and achieving the Audubon Cooperative Sanctuary Program (ACSP) certification for the Nehoiden Golf Club.

Stormwater BMPs that were built on or after January 1, 2005 that infiltrate stormwater from previously directly connected impervious surfaces⁴ are eligible for the mitigation credits. The BMP mitigation credit is calculated based on average annual precipitation, BMP design infiltration depth⁵, and the area of directly connected impervious surface built prior to 2005 re-directed to the BMP built on or after January 1, 2005. Wellesley College identified one stormwater BMP that qualified for direct mitigation credits. Based on the information submitted by the college, the Alumnae Valley located on the northeast side of the Wellesley College campus previously discharge runoff to Lake Waban. A total of 3.61 acres of impervious surface consisting of a parking lot and tennis courts was redeveloped to open landscape between 2004-2006. This project infiltrates 0.0085 MGD of stormwater.

Since the stormwater infiltrated is less than the volume required to be mitigated and without any other identified eligible direct mitigation activities, indirect mitigation activities needed to be evaluated. Wellesley College identified land purchased for non-water supply conservation purposes as one of its indirect mitigation options. The protection of lands for non-water supply conservation purposes may be eligible for 0.2 credits per acre if the land is deemed as Priority Conservation Lands, or 0.1 credits for each acre not covered under Priority Conservation Lands but which is for wildlife and habitat conservation purposes, up to a maximum of 5 credits. MassDEP reviewed the land purchase and protection documentation submitted by Wellesley College and determined that Wellesley College is qualified for 1.04 credits for land protection. As outlined in the 2014 Water Management Act Permit Guidance, 1 indirect mitigation credit translates into 0.01 MGD (10,000 gpd) of required mitigation, which means this credit is translated to 0.0104 MGD (10,040 gpd) of mitigation. The details on the parcel purchased and protected is in Appendix 1 of this permit.

Wellesley College owns and operates the Nehoiden Golf Club. The Golf Club plans to achieve the Audubon Cooperative Sanctuary Program (ACSP) certification. To meet the remaining mitigation requirements of 0.011 MGD, the Nehoiden Golf Club is required to achieve recognitions on at least the Environmental Planning, the Water Conservation and one more component chosen by the golf club of the ACSP. The Nehoiden Golf Club shall keep its achieved ACSP recognitions or certification active during the life of this permit. Wellesley College may withdraw up to the authorized volume of 0.35 MGD during the first two years after the issuance of the final permit. If the Nehoiden Golf Club fails to achieve those components of the ACSP within two years of the issuance of the final permit, Wellesley College shall submit a permit amendment application with additional mitigation included to maintain the ability to withdraw the full authorized volume of 0.35 MGD.

Coldwater Fish Resource Protection was incorporated into the Water Management Regulation in November 2014. Coldwater Fish Resource protection is not a condition of this permit because Wellesley College's withdrawals do not impact any waters that the Massachusetts Division of Fisheries and Wildlife has identified as supporting coldwater fish at this time.

⁴ Directly connected impervious surfaces are those whose runoff discharges to a surface water body.

⁵ BMP design infiltration depth is the inches of runoff from 24 hours of precipitation that is infiltrated via a BMP in 72 hours, per MA Stormwater Handbook, Vol. 3, Ch. 1, page 25



Department of Environmental Protection

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DRAFT WATER WITHDRAWAL PERMIT #9P4-3-20-317.01 - Wellesley College

This permit is issued pursuant to the Massachusetts Water Management Act (WMA) for the sole purpose of authorizing the withdrawal of a volume of water as stated below and subject to the following special and general conditions. This permit conveys no right in or to any property beyond the right to withdraw the volume of water for which it is issued.

PERMIT NUMBER: 9P4-3-20-317.01

RIVER BASIN: Charles River

PERMITTEE: Wellesley College

EFFECTIVE DATE: XXXXX, 2022

EXPIRATION DATE: June 5, 2034*

* The original expiration date for this permit was February 28, 2029. The expiration date was extended by four years by St. 2010, c. 240, as amended by St. 2012, c.238, collectively known as the Permit Extension Act. The expiration date was further extended by 462 days due to COVID-19 Order No. 42, "Order Resuming State Permitting Deadlines and Continuing to Extend the Validity of Certain State Permits," issued on July 2, 2020.

NUMBER OF WITHDRAWAL POINTS: 6

Groundwater: 5

Surface Water: 1

USE: Public Water Supply and Irrigation

DAYS OF OPERATION: 365 for public water supply wells and the Botany Well #3
240 (April-November) for irrigation sources

LOCATION:

Source Name	PWS Source ID Code
Botany Well #1	3317001-01G
Botany Well #2	3317001-02G
Botany Well #3	Non-potable irrigation source
Nehoiden Irrigation Well #1	Non-potable irrigation source
Nehoiden Irrigation Well #2	Non-potable irrigation source
Lake Waban	Non-potable irrigation source

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes Wellesley College to withdraw water from the Charles River Basin at the rate described below in Table 1. The permitted volume is expressed both as an annual average daily withdrawal rate (million gallons per day or MGD), and as a total annual withdrawal volume (million gallons per year or MGY) for each permit period over the term of this permit.

The Department of Environmental Protection (MassDEP) bases these withdrawal volumes on the raw water volume from the authorized withdrawal points and will use the raw water volume to assess compliance with the permitted withdrawal volumes.

Table 1: Maximum Authorized Annual Withdrawal Volumes

Permit Periods	Total Raw Water Withdrawal Volumes	
	Daily Average (MGD)	Total Annual (MGY)
xx/xx/2022 to 6/5/2029	0.35	127.75
6/6/2029 to 6/5/2034*	0.35	127.75

* The original expiration date for this permit was February 28, 2029. The expiration date was extended by four years by St. 2010, c. 240, as amended by St. 2012, c.238, collectively known as the Permit Extension Act. The expiration date was further extended by 462 days due to COVID-19 Order No. 42, "Order Resuming State Permitting Deadlines and Continuing to Extend the Validity of Certain State Permits," issued on July 2, 2020.

2. Maximum Authorized Daily Withdrawals from Each Withdrawal Point

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed in Table 2 without specific advance written approval from MassDEP. The authorized maximum daily volume is the approved rate of each source. In no event shall the combined withdrawals from the individual withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1. The maximum daily rates in Table 2 for Botany Wells #1 & #2 and Nehoiden Wells #1 & #2 are combined rates for each pair of wells.

Table 2: Maximum Daily Withdrawal Volumes

Source Name	PWS Source ID Code	Maximum Daily Rate (MGD)
Botany Wells #1 & #2	3317001-01G and -02G	0.634
Botany Well #3	Irrigation Only	0.093
Nehoiden Wells #1 & #2	Irrigation Only	0.36
Lake Waban	Irrigation Only	0.50

3. Zone of Contribution Delineations

MassDEP records show that Wellesley College's public water supply wells have MassDEP an approved Zone II delineation. No further Zone II work is required as a condition of this permit.

4. Water Supply Source Protection

Wellesley College is required to repeat the Best Effort Requirements per 310 CMR 22.21 (1) to encourage the Town of Wellesley to adopt municipal protection control (bylaws and/or board of health regulations) that meet MassDEP Wellhead Protection Regulations 310 CMR 22.21 (2). Wellesley College shall complete this effort within one year of the issuance of the permit. If you need assistance on groundwater supply protection requirements, please contact Catherine Hamilton of MassDEP's Boston Office at 617-556-1070.

5. Seasonal Limits on Nonessential Outdoor Water Use

Wellesley College shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in Table 3 below. To the extent feasible, all summer outdoor water use should take place before 9 am and after 5 pm when evaporation and evapotranspiration rates are lower.

Table 3: Seasonal Limits on Nonessential Outdoor Water Use

Option 1: Calendar based summer water use limitations	
Action Trigger	Required Water Use Restrictions
May 1- September 30	Water use for irrigation allowed daily as needed before 9 am and after 5 pm , when evapotranspiration rates are low, on: <ul style="list-style-type: none"> ○ Golf course tees and greens ○ Golf course fairways ○ Athletic fields Hand-watering and Controlled Irrigation System watering of hot spots may occur at anytime as necessary.
May 1- September 30	Water use for irrigation allowed no more than two days per week before 9 am and after 5 pm, when evapotranspiration rates are low, on: <ul style="list-style-type: none"> ○ Lawns ○ Ornamental plantings ○ Golf course roughs Hand-watering and Controlled Irrigation System watering of hot spots may occur at anytime as necessary.
Level 1-Mild Drought (formerly Advisory), Level 2-Significant Drought (formerly Watch) or Level 3-Critical Drought (formerly Warning) declared by the Massachusetts Drought Management Task Force (MDMTF).	Water use for irrigation allowed no more than one day per week before 9 am and after 5 pm, when evapotranspiration rates are low, on: <ul style="list-style-type: none"> ○ Lawns ○ Ornamental plantings

<p>Drought levels may be monitored at: https://www.mass.gov/info-details/drought-status</p> <p>Facilities manager shall be responsible for tracking drought declarations and recording when restrictions are implemented.</p>	<ul style="list-style-type: none"> ○ Golf course roughs <p>Hand-watering and Controlled Irrigation System watering of hot spots may occur at anytime as necessary.</p>
<p>Level 4- Emergency Drought declared by the Massachusetts Drought Management Task Force (MDMTF)</p>	<p>At a minimum, water use for irrigation must cease on:</p> <ul style="list-style-type: none"> ○ Lawns ○ Ornamental plantings ○ Golf course roughs <p>Should the Governor proclaim a state of Emergency, additional mitigation actions To Be Determined by the Governor's Emergency Proclamation.</p>
Option 2: Streamflow based summer water use limitations	
Action Trigger	Required Water Use Restrictions
<p>May 1- September 30</p>	<p>Water use for irrigation allowed daily as needed before 9 am and after 5 pm, when evapotranspiration rates are low, on:</p> <ul style="list-style-type: none"> ○ Golf course tees and greens ○ Golf course fairways ○ Athletic fields <p>Hand-watering and Controlled Irrigation System watering of hot spots may occur at anytime as necessary.</p>
<p>Whenever stream flow falls below a designated flow trigger of:</p> <ul style="list-style-type: none"> ○ 170 cubic feet per second (CFS) from May 1 to June 30 (value to be based on the Spring bioperiod for fish spawning), and ○ 62 CFS from July 1 to September 30 (value based on the Summer bioperiod for fish rearing and growth) <p>for three (3) consecutive days. Streamflow shall be measured at the USGS Dover Gage #01103500.</p> <p>Daily Streamflow gage readings can be accessed at: http://waterdata.usgs.gov/ma/nwis/current/?type=flow</p>	<p>Water use for irrigation allowed no more than one day per week before 9 am and after 5 pm, when evapotranspiration rates are low, on:</p> <ul style="list-style-type: none"> ○ Lawns ○ Ornamental plantings ○ Golf course roughs <p>Hand-watering and Controlled Irrigation System watering of hot spots may occur at anytime as necessary.</p>
<p>Facilities manager shall be responsible for tracking streamflows and recording when restrictions are implemented.</p>	

Once implemented, the restrictions shall remain in place until streamflow at the Dover Gauge meets or exceeds the trigger streamflow for seven (7) consecutive days.	
<p>Level 1-Mild Drought (formerly Advisory), Level 2-Significant Drought (formerly Watch) or Level 3-Critical Drought (formerly Warning) declared by the Massachusetts Drought Management Task Force (MDMTF).</p> <p>Drought levels may be monitored at: https://www.mass.gov/info-details/drought-status</p> <p>Facilities manager shall be responsible for tracking drought declarations and recording when restrictions are implemented.</p>	<p>Water use for irrigation allowed no more than one day per week before 9 am and after 5 pm, when evapotranspiration rates are low, on:</p> <ul style="list-style-type: none"> ○ Lawns ○ Ornamental plantings ○ Golf course roughs <p>Hand-watering and Controlled Irrigation System watering of hot spots may occur at anytime as necessary.</p>
<p>Level 4-Emergency Drought declared by the Massachusetts Drought Management Task Force (MDMTF)</p>	<p>At a minimum, water use for irrigation must cease on:</p> <ul style="list-style-type: none"> ○ Lawns ○ Ornamental plantings ○ Golf course roughs <p>Should the Governor proclaim a state of Emergency, additional mitigation actions To Be Determined by the Governor's Emergency Proclamation.</p>

Instructions for Accessing Streamflow Website Information

If Wellesley College chooses Streamflow Triggered Restrictions, Wellesley College shall be responsible for tracking streamflows and drought advisories and recording and reporting to MassDEP when restrictions are implemented.

Streamflow information is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts streamflows in real time, i.e., the most recent, usually quarterly hourly, reading made at each USGS stream gage.

Seasonal Limits on Nonessential Outdoor Water Use are implemented when the mean daily streamflow falls below the designated trigger. The mean daily flow is not calculated until after midnight each day when the USGS computes the hourly data into a mean daily streamflow. As a result, permittees must use the mean daily streamflow from the preceding day when tracking streamflows.

Mean daily streamflow gage readings are available at the USGS NWIS Web Interface at <http://waterdata.usgs.gov/ma/nwis/current/?type=flow>.

- Scroll down to 01103500 – Charles River at Dover, MA.
- Click on the gage number.
- Scroll down to “Provisional Date Subject to Revision – Available data for this site” and click on the drop-down menu.
- Click on “Time-series: Daily data” and hit GO.

Instructions for Accessing Streamflow Website Information

- Scroll down to the “Available Parameters” box. Within the box, be sure “00060 Discharge (Mean)” is checked, then, under “Output Format” click “Table” and hit GO.
- Scroll down to “Daily Mean Discharge, cubic feet per second” table and find the current date on the table.
- Compare the cubic feet per second (cfs) measurement shown on the table to the cfs shown under Streamflow Triggered Restrictions above.

Wellesley College shall document compliance with the Seasonal Nonessential Outdoor Water Use Restrictions annually in its Annual Statistical Report (ASR) and indicate whether it anticipates implementing calendar triggered restrictions or streamflow triggered restrictions during the next year.

Restricted Nonessential Outdoor Water Uses

Nonessential outdoor water uses that are subject to mandatory restrictions include:

- irrigation of lawns via sprinklers or automatic irrigation systems;
- filling swimming pools;
- washing of vehicles, except in a commercial car wash or as necessary for operator safety; and
- washing of exterior building surfaces, parking lots, driveways or sidewalks, except as necessary to apply surface treatments such as paint, preservatives, pavement or cement.

The following uses may be allowed when mandatory restrictions are in place:

- irrigation to establish a new lawn and new plantings during the months of May and September;
- irrigation of public parks and recreational fields before 9 am and after 5 pm;
- irrigation of gardens, flowers and ornamental plants by means of a hand-held hose or drip irrigation systems; and
- irrigation of lawns by means of a hand-held hose.

Water uses NOT subject to mandatory restrictions are those required:

- for health or safety reasons;
- by regulation;
- for the production of food and fiber;
- for the maintenance of livestock; or
- to meet the core functions of a business (for example, irrigation by golf courses as necessary to maintain tees, greens, and minimal fairway watering, or irrigation by plant nurseries as necessary to maintain stock).

Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions

Wellesley College shall notify its customers of the restrictions and the consequences of failing to adhere to the restrictions.

- For calendar-triggered restrictions, customers shall be notified by April 15th each year.
- For streamflow-triggered restrictions, when streamflow at the assigned USGS local stream gage falls below a streamflow trigger for three consecutive days, customers shall be notified as soon as possible, but within three days of implementing the restrictions.

Notice that restrictions have been put in place shall be filed each year with MassDEP within 14 days of the restriction’s effective date. Filing shall be in writing on the form “Notification of Water Use Restrictions” available on MassDEP’s website.

Nothing in the permit shall prevent Wellesley College from implementing water use restrictions that are more stringent than those set forth in this permit.

6. Requirement to Report Raw and Finished Water Volumes

Wellesley College shall report annually on its ASR the raw water volumes and finished water volumes for the potable (PWS) water system and the raw water volumes for individual water withdrawal points. In addition, Wellesley College shall also report electronically all raw water withdrawal volumes, both potable and non-potable.

7. Water Conservation Requirements

At a minimum, Wellesley College shall implement the following conservation measures. Wellesley College shall continue to implement the Best Management Practices (BMPs) listed in its Order to Complete (OTC) responses on March 9, 2021 (Appendix 2).

Table 4: Minimum Water Conservation Requirements	
System Water Audits and Leak Detection	
1.	At a minimum, conduct a full leak detection survey every two years unless the results of the water audit indicate that recoverable leakage constitutes a small portion of the system's unaccounted-for water. The first full leak detection survey shall be completed no later than 2 years from the date of last documented leak detection survey. Within 60 days of completing the leak detection survey, the Permittee shall submit to MassDEP for its review a report detailing the leak detection survey, any leaks uncovered as a result of the survey or otherwise, dates of repair and the estimated water savings as a result of the repairs.
2.	Conduct field surveys for leaks and repair programs in accordance with the <i>AWWA Manual 36</i> .
3.	<p>The Permittee shall have repair reports available for inspection by MassDEP. Establish a priority schedule for repairing leaks that is at least as stringent as the following:</p> <ul style="list-style-type: none">• Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection.• Leaks of less than 3 gallons per minute at hydrants and appurtenances shall be repaired as soon as possible.• Leaks of less than 3 gallons per minute shall be repaired in a timely manner, but in no event more than 6 months from detection, except that leaks in freeway, arterial or collector roadways shall be repaired when other roadwork is being performed on the roadway. <p>The following exceptions can be considered:</p> <ul style="list-style-type: none">• Repair of leakage detected during winter months can be delayed until weather conditions become favorable for conducting repairs;* and• Leaks in freeway, arterial or collector roadways may be coordinated with other scheduled projects being performed on the roadway.** <p>*Reference: MWRA regulations 360 CMR 12.09 **Mass Highway or local regulations may regulate the timing of tearing up pavement on roads to repair leaks.</p>

Table 4: Minimum Water Conservation Requirements	
Metering	
1.	Calibrate all source and finished water meters at least annually and report date of calibration on the ASR and Water Management Act Annual report form.
2.	Meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.
Indoor Water Use Conservation	
1.	The Permittee shall meet the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code, as amended.
2.	Wellesley College reports that low flow fixtures (faucet aerators, toilets/urinals, shower heads, etc.) has been installed in all buildings.

8. Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins

Wellesley College shall minimize the impacts of its groundwater withdrawals from sources in Subbasin 21103 through the continued implementation of the following water conservation measures:

Table 5. Water Conservation Measures in an Irrigation System Minimization Plan
1. Use of an onsite weather station combined with an automated sprinkler system governed by atmospheric conditions.
2. Installation of rain shutoff switches on all new and existing irrigation systems.
3. Reduction of irrigation rates in secondary rough acres and, where possible, elimination of irrigation in non-play areas.
4. Use of low-water use turf grass where applicable.
5. Use of native drought-tolerant plants where feasible around buildings, parking areas or other appropriate places.
6. Employee training in water conservation and management.
7. Improving irrigation uniformity through careful evaluation of design criteria such as nozzle size, spacing, scheduling coefficient and pressure selection.
8. Using 3 rd party retrofit nozzles.
9. Install low-pressure alarms on new irrigation system.

9. Mitigation of Impacts for Withdrawals that Exceed Baseline

Wellesley College is required to mitigate 0.03 MGD for its permitted withdrawals over the baseline. Wellesley College's mitigation will be met through a combination of direct mitigation credits accrued through stormwater recharge and the indirect credits achieved through non-water supply conservation land protection and the Audubon Cooperative Sanctuary Program (ACSP) recognitions or certification at the Nehoiden Golf Club.

Wellesley College identified an eligible stormwater recharge mitigation project at the Alumnae Valley located on the northeast side of the Wellesley College campus. The projects was completed between 2004 and 2006. According to the information provided, the Alumnae Valley project with a design infiltration depth of 1 inch would infiltrate 0.0085 MGD of stormwater for the 3.61 acres of directly connected impervious surface built before 2005.

Wellesley College acquired and protected a total of 10.4 acres of non-water supply conservation lands in 2010 that qualify for indirect mitigation credits. The parcels purchased and protected (see Appendix 1) are eligible for 0.10 credits per acre which is equal to 1.04 indirect mitigation credits or 0.0104 MGD (10,040 gallons per day).

Wellesley College shall achieve recognition in the Environmental Planning, the Water Conservation and at least one other component (Wildlife and Habitat Management, Chemical Use Reduction and Safety, Water Quality Management) of the ACSP within two years of the issuance of the final permit. Wellesley College shall maintain the required ACSP recognitions or certification during the life of this permit.

General Permit Conditions (applicable to all Permittees)

1. **Duty to Comply** The Permittee shall comply at all times with the terms and conditions of this permit, the Act and all applicable State and Federal statutes and regulations.
2. **Operation and Maintenance** The Permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw up to the authorized volume so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The Permittee or the Permittee's agent shall allow personnel or authorized agents or employees of MassDEP to enter and examine any property, inspect and monitor the withdrawal, and inspect and copy any relevant records, for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by MassDEP pursuant to M.G.L. c. 21G, §§ 15-17, M.G.L. c. 111, § 160, or any other enabling authority.
5. **Transfer of Permits** This permit shall not be transferred in whole or in part unless and until MassDEP approves such transfer in writing, pursuant to a transfer application on forms provided by MassDEP requesting such approval and received by MassDEP at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.37.
6. **Duty to Report** The Permittee shall submit annually, on a form provided by MassDEP, a certified statement of the withdrawal. Such report is to be received by MassDEP by the date specified by MassDEP. Such report must be mailed or hand delivered to the address specified on the report form.
7. **Duty to Maintain Records** The Permittee shall be responsible for maintaining withdrawal records as specified by this permit.
8. **Metering** Withdrawal points shall be metered. Meters shall be calibrated annually. Meter shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
9. **Amendment, Suspension or Termination** The Department may amend, suspend or terminate this permit in accordance with M.G.L. c. 21G or 310 CMR 36.29.

APPEAL RIGHTS AND TIME LIMITS

This permit is a decision of MassDEP. Any person aggrieved by this decision may request an adjudicatory hearing. Any such request must be made in writing, by certified mail and received by MassDEP within twenty-one (21) days of the date of receipt of this permit.

No request for an appeal of this permit shall be validly filed unless a copy of the request is sent by certified mail, or delivered by hand to the local water resources management official in the community in which the withdrawal point is located; and for any person appealing this decision, who is not the applicant, unless such person notifies the permit applicant of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to MassDEP.

CONTENTS OF HEARING REQUEST

310 CMR 1.01(6)(b) requires the request to include a clear and concise statement of the facts which are the grounds for the request and the relief sought. In addition, the request must include a statement of the reasons why the decision of MassDEP is not consistent with applicable rules and regulations, and for any person appealing this decision who is not the applicant, a clear and concise statement of how that person is aggrieved by the issuance of his permit.

FILING FEE AND ADDRESS

The hearing request, together with a valid check, payable to the Commonwealth of Massachusetts in the amount of \$100 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

EXEMPTIONS

The filing fee is not required if the appellant is a municipality (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

WAIVER

MassDEP may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of MassDEP that the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request, an affidavit setting forth the facts which support the claim of undue hardship.

Duane LeVangie
Water Management Program Chief
Bureau of Water Resources

Date

Appendix 1 Land Purchased and Protected for Indirect Mitigation Credit

Owner	Parcel Purchase Date	Assessors Map/Lot Numbers	Deed Book/Page Number	Conservation Restriction/Easement Book/Page Number	Other Conservation Land Area (acres)
Wellesley College	9/10/2010	186-1	Book 28016, Page 289	Book 35460, Page1	10.4
				Total Credits	1.04

Appendix 2 Current irrigation Best Management Practices (BMPs) implemented

Q8: Please submit a list of the current irrigation Best Management Practices (BMPs) that are implemented at Wellesley College.

106 Central Street, Wellesley, MA 02481 Tel 781.283.3882 Fax 781.283.3643

4

WELLESLEY COLLEGE

FACILITIES MANAGEMENT AND PLANNING

We use two central control systems on campus. At Nehoiden we use the Rain Bird Stratus 2, and for the campus landscape and the athletic fields we use the Rain Bird IQ system. Both of these systems allow for access and control of all irrigation zones remotely. These two central controllers allow us to automatically adjust our systems based on real time weather and evapotranspiration data. We work with an irrigation designer on all of our upgrades, to insure we are being as efficient in our water use as possible.

We have installed rain sensors on all of our upgraded systems. We also use soil moisture probes, along with physical inspection to determine moisture needs.

We have created 6 acres of no mow non-irrigated / naturalized areas on the golf course, and 7 acres of the same on campus. We also manage large meadow and wetland areas.

Last year we installed new irrigation pumps and controls related to our Lake Waban intake. These new controls allow us to access water use reports remotely, and warn us in the event of leaks, or failures in the system.

We focus heavily on the use of cultural practices in both our turf areas and planting beds on campus, and the golf course. We use aeration, the use of mulch, top dressing, proper planting techniques, height of cut, and the use of wetting agents to help us retain and move water through the soil profile. All of these practices help to reduce compaction and run off. We also overseed our turf areas using up to 5000 lbs of grass seed per year, 3000 lbs of which is classified as an A-List mix (Alliance for Low Impact Sustainable Turf) which requires significantly less irrigation.